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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,440	10/16/2003	Michael J. O'Brien	86847SHS	8770

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12/17/2004

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EXAMINER

FERGUSON, MICHAEL P

ART UNIT	PAPER NUMBER
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3679

DATE MAILED: 12/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/687,440

Applicant(s)

O'BRIEN ET AL. *SO*

Examiner

Michael P. Ferguson

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 17 and 18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 10-16 is/are rejected.
- 7) ☒ Claim(s) 8 and 9 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/16/03</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-16, drawn to a reusable self-aligning precision latch, classified in class 403, subclass 322.1.
 - II. Claims 17 and 18, drawn to a method for constructing a flexured ball assembly, classified in class 29, subclass 441.1.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by another and materially different process such as the flexured ball assembly could include a flexure which captures the compliant member subsequently to latching.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Robert P. Seitter on December 1, 2004 a provisional election was made with traverse to prosecute the invention of Group II, claims 17 and 18. Affirmation of this election must be made by applicant in replying to

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this Office action. Claims 17 and 18 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-7 and 10-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Braccio et al. (US 4,905,938).

As to claim 1, Braccio et al. disclose a reusable self-aligning precision latch, comprising:

a latch body **740** for mounting a latch assembly, including an interface cone **742**;

a lead screw **918**, coupled to the latch body on one end, that pivots (rotates) at an interface on the latch body allowing for self-alignment;

a drive cam **916** having a plurality of surfaces and positioned on the lead screw engaging a plurality of linkage assemblies **912,756'** such that two links **912,756'** are driven;

a flexured ball assembly clamped by the plurality of linkage assemblies to the latch body with a pivoting (rotatable) clamp plate **7550** such that all clamping forces between the pivoting clamp plate and the latch body are equalized; and

a motor **924** for closing and opening the self-aligning precision latch by turning the lead screw to apply and release, respectively, the clamping forces between the pivoting clamp plate and the latch body (Figures 7-9).

As to claim 2, Braccio et al. disclose a precision latch wherein the motor **924** and the lead screw **918** combine to provide controlled movement of a plurality of clamping pawls **756** (Figure 9).

As to claim 3, Braccio et al. disclose a precision latch wherein the plurality of linkage assemblies includes a coupler link **912** and a follower link **756'** (Figure 9).

As to claim 4, Braccio et al. disclose a precision latch wherein a nub on the coupler link **912** is positively engaged on one of the plurality of surfaces of the drive cam **916** (Figure 9).

As to claim 5, Braccio et al. disclose a precision latch wherein the plurality of linkage assemblies comprised of a coupler link **912**, a follower link **756'**, and a drive cam **916** form a four bar linkage mechanism (Figure 9).

As to claim 6, Braccio et al. disclose a precision latch wherein the follower link **756'** is grounded upon one of the plurality of surfaces of the drive cam **916** (via coupler link **912**) such that a simple lever mechanism remains (Figure 9).

As to claim 7, Braccio et al. disclose a precision latch wherein the follower link **756'** is driven by the drive cam **916** to apply the clamping forces (Figure 9).

As to claim 10, Braccio et al. disclose a method for latching, employing a kinematic, self-aligning precision latch, comprising the steps of:

holding the precision latch open in its initial state to provide unobstructed axial and radial ball seat clearances;

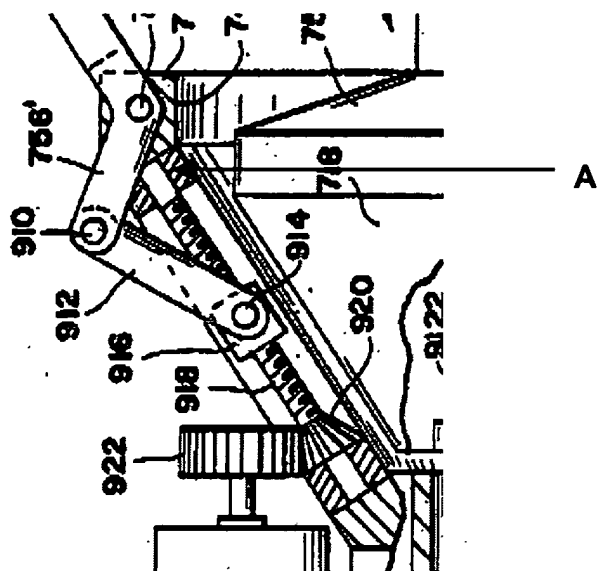
positioning a plurality of clamping pawls **756** over a clamp plate **7550** to fully capture the clamp plate preventing displacement from a latch seat **742**;

making contact with the clamp plate with a follower link **756'** in a manner as to equalize forces on the clamp plate;

applying a force to the clamp plate by effectively grounding the follower link of a four bar mechanism (via coupler link **912**), thereby, forming a simple lever to obtain mechanical advantage at the clamp plate;

providing a clamping force on the clamp plate by deforming a coupler link **912** via a cam **916**; and

locking the precision latch in its final state with action from (abutting abutment member **A**; Figure 9 reprinted below with annotations) a fixed displacement portion (end face of cam **916**) of the cam (Figures 7-9).



As to claim 11, Braccio et al. disclose a method wherein the step of positioning a plurality of clamping pawls **756** over a clamp plate **7550** includes combining action of a motor **924** and a lead screw **918** to provide controlled movement of the plurality of clamping pawls (Figure 9).

As to claim 12, Braccio et al. disclose a method wherein the follower link **756'** is a part of a linkage assembly that also includes a coupler link **912** (Figure 9).

As to claim 13, Braccio et al. disclose a method wherein a nub on the coupler link **912** is positively engaged on one of a plurality of surfaces of the cam **916** (Figure 9).

As to claim 14, Braccio et al. disclose a method wherein the linkage assembly comprised of the coupler link **912**, the follower link **756'**, and the cam **916** form a four bar linkage mechanism (Figure 9).

As to claim 15, Braccio et al. disclose a method wherein the follower link **756'** is grounded upon one of the plurality of surfaces of the cam **916** (via coupler link **912**) such that a simple lever mechanism remains (Figure 9).

As to claim 16, Braccio et al. disclose a method wherein the follower link **756'** is driven by the drive cam **916** to apply the clamping force (Figure 9).

Allowable Subject Matter

8. Claims 8 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

As to claim 8, Braccio et al. disclose the claimed precision latch with the exception of wherein the flexured ball assembly includes a ball; a floating clamp plate, in contact with the ball, and maintained perpendicularly to an axis of the flexured ball assembly by a compliant member; and a flexure having a retaining flange for capturing the compliant member.

It would not have been obvious to one having ordinary skill in the art at the time the invention was made to modify a precision latch as disclosed by Braccio et al. to have the above mentioned elements as the prior art neither teaches nor suggests such modifications.

Conclusion

The prior art made of record and not relied upon is considered pertinent to the applicant's disclosure. The following patents show the state of the art with respect to latch assemblies:

Brockmann et al. (US 4,368,913), Darmstadt (US 422,739) and Reischl (US 3,445,133) are cited for pertaining to latches comprising coupler and follower links having clamping pawls.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Ferguson whose telephone number is (703)308-8591. The examiner can normally be reached on M-F (7:30-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (703)308-2686. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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